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The Impact of Smoking Ban Fatwa on Indonesian Tobacco's Company: Evidence from Stock Market Return

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Abstract

The objective of this study is to assess the share price reactions to smoking ban *fatwa* on Indonesia tobacco's company. We expect that the smoking ban fatwa in the world's largest Muslim population will hit the tobaccos industry revenues, lower tobacco's company profit and eventually affect the share price of those firms. We use event study methodology and standard market model to calculate abnormal returns of the tobacco's firms related to the news of smoking ban *fatwa*. Our study failed to find a statistically significant effect of smoking ban *fatwa* on tobacco's firm stock market return. It suggests that the investors do not see the *fatwa* as a factor that may control the tobacco consumption in Indonesia – thus it may not affect the tobacco's firm revenues and profit in the future

Keywords: smoking ban *fatwa*, tobacco industry, market reaction.

1. Introduction

The purpose of this study is to examine the impact of smoking ban *fatwa* on share price of Indonesian tobacco's company. Given the recent introduction of the *fatwa,* the effect of such restriction is unknown. Understanding how the financial market will react to the restriction of this nature is important; as firms that are engaged in tobacco industry might find that the *fatwa* will hit their revenues, thus will lower their profit and eventually affects the future prospect of their business. The ulema's decision to ban smoking in public, children and pregnant woman has fueled the debate whether the decision will have an impact in the tobacco industry which provide work for millions workers.

The first argument is that the decision will affect the industry as most of Indonesia's populations are Moslems; hence it is most likely they will adhere to the *fatwa.* As a consequence it may hit the business (i.e. tobacco producer) that it could trigger a drop in cigarette output. The second argument is that the *fatwa* did not apply a blanket ban on smoking; it instead issued a fatwa placing more limited restrictions on tobacco use. In addition, even though Indonesia is the

largest Muslims country in the world, Indonesia has been known as a secular country where the *fatwa* is not legally binding for Muslims. Therefore one may argue that little effect will occur to the tobacco business.

Our study failed to find a statistically significant negative abnormal return as an effect of smoking ban *fatwa* on tobacco's firms. It provides evidence that the investors do not see *fatwa* as a factor that may control the tobacco consumption in Indonesia – thus it may not affect the tobacco's firm revenues and profit in the future. Additional test by comparing the abnormal returns of firms in tobacco industry and banking industry – as control group – provide a support our conclusion. We do not find a statistically significant difference between abnormal returns of firms in tobacco industry compare to firms in banking industry in the event date of smoking ban *fatwa* news.

The remainder of the study is organized as follows. A background to the smoking band *fatwa* issuance is provided in section 2. Development of hypotheses and literature review are discussed in Section 3, and Section 4 presents data selection. Section 5 illustrates the methodology of the study and Section 6 reports the results. Section 7 summarizes the study.

2. Background and Literature Review

Smoking is widespread in Indonesia, with cigarettes among the cheapest in the world at around $2 a pack, Indonesia is the world's No. 5 largest tobacco market by volume[a]. Many Indonesians also have a strong cultural affinity with smoking, with pressure to hang out and smoke after celebrations for births or weddings in villages across the archipelago. Some cities in Indonesia, including Jakarta, have banned smoking in public places, but the rules are widely ignored. The US$8 billion tobacco industry in Indonesia plays an important economic role, with tax on cigarettes accounting for about 10 per cent of government income in the past, while the sectors provide millions of jobs (Reynolds, 1999).

In order to reduce tobacco consumption, the anti smoking campaigners had urged the government to ratify the World Health Organisation's Framework Convention on Tobacco Control. Indonesia, however, has been reluctant to sign up because of concerns about the impact on the economy despite the health risks from smoking. This issue has brought the attention of MajelisUlama Indonesia (MUI) or Ulema Council - a top islamic body in the world's most populous Muslim. The council, established in 1975, has carved a key role for itself in Indonesia and its pronouncements on everything from Islamic banking to halal food can have a big influence on Southeast Asia's biggest economy.

The debate over smoking has revealed a split between those wanting to make it "haram," or not allowed, and others who favor a "makruh," a Arabic term whereby it would only be advised that smoking is bad and it is better to drop it. Some clerics also argued that there was no Islamic tenet that bans smoking. Finally, **on Sunday, January 25**, 2009 nearly 700 people, including Muslim clerics and theological experts, have gathered in West Sumatra for the National Edict Commission meeting, which could issue *fatwa* whether to apply a blanket ban on smoking for Muslims or place a more limited restriction on tobacco use. In the end, after a heated debate, the council said a decision could not be reached and only forbade smoking in public or smoking by council members of MUI, children and pregnant women. The fatwa is not legally binding for Muslims, who make up some 86.1 percent of Indonesia's 235 million population, but place pressure on Muslims to adhere to them and can influence government policy.

Prior studies related to the smoking ban policies around the world have been extensively examined, not only from health and environment perspective but also from economic view. The evidence on the impact of smoking ban on business is mix. A body of literature finds that there is no significant effect of smoking ban on business. Bartosch and Pope (1999) and Alpert et al (2007), for example, do not find significant effect of Massachusetts smoke-free workplace policies on restaurant business and several economic indicators. By analyzing 97 studies that made statement about economic impact of smoke-free policies – Scollo et al (2003) conclude that all of the best designed and independent studies report no impact of smoke-free restaurant and bar laws on sales and employment. Using Australia's cigarette and tobacco consumption product, real income and demographic effects as contextual factors,

[a]BAT website. News Release. June 17, 2009. British AmericanTobaccoacquirescontrol of Indonesia's Bentoel.http://www.bat.com/group/sites/uk__3mnfen.nsf/vwPagesWebLive/DO7T3LEJ?opendocument&SKN=1

Bardsley and Olekalns (1999) also find a relatively minor impact of workplace smoking bans and anti-smoking advertising on cigarette and tobacco consumption.

The second body of literature has documented evidence on the negative impact of smoking ban on business. Adda, Berlinski and Machin (2007) for example, used a quasi-experimental research design that compared the sales and number of customers in public houses located in Scotland before and after the Scottish smoking ban was introduced, relative to a control group of establishments across the English border where no ban was imposed. They find suggests that the Scottish smoking ban had a negative economic impact on public houses, at least in the short run, due in part to a drop in the number of customers and sales. Using stock market return and event study as main methodology, Tomlin (2009) documents negative abnormal stock returns to portfolios of the hospitality industry firms examined upon the announcement of a proposed smoking ban. These results support the conclusion that a smoking ban lowered the aggregate market value of these firms.

In Indonesian context, ulema's decision to ban smoking in public, children and pregnant woman has also fueled the debate whether it will have an effect to the tobacco industry or not. The first argument is that the decision will affect the industry as most of Indonesia's populations are Muslims; hence it is most likely they will adhere to the *fatwa.* As a consequence it may hit the business (i.e. tobacco producer) that it could trigger a drop in cigarette output. The second argument is that the *fatwa* did not apply a blanket ban on smoking; it instead issued a fatwa placing more limited restrictions on tobacco use. In addition, even though Indonesia is the largest Muslims country in the world, Indonesia has been known as a secular country where the *fatwa* is not legally binding for Muslims. Therefore one may argue that little effect will occur to the tobacco business.

Given the forward looking characteristics of capital markets, investors in stocks are expected to be among the first to react to the smoking bans *fatwa* that may has adverse effects on the revenues and profits of tobacco firms. It is expected that the market participants are able to assess the risk and uncertainty of future profitability of the tobacco firm due to smoking ban *fatwa.* Therefore, the first hypothesis for this study is (stated in alternative hypothesis):

H_1: *The abnormal returns for firms in tobacco industry at the event window of smoking ban* fatwa *are negative*

Since the smoking ban *fatwa* is expected to have an effect on tobacco industry firm due to the characteristic of the industry, we expect that there is no similar reaction to the banking industry as a control group. Therefore, the second hypothesis for this study is (stated in alternative hypothesis):

H_2: *There is a difference between the abnormal returns for firms in tobacco industry and banking industry at the event window of smoking ban* fatwa.

3. Data Collection

We have 2 sample categories: experiment and control sample. The share price data are obtained from Indonesian Stock Exchange (ISX) database. In order to be included in the experiment sample, we use the following sample selection category:

1. The firms are included in tobacco industry – the industry that most likely will be most affected by the smoking ban *fatwa;*
2. The firms' shares are actively traded during 200 days in estimation period and during event day period; and
3. The firms do not experience any confounding events such as earnings and dividend announcement during the observation period.

It brings us with experiment sample firms as listed in Table 1 below:

Table 1.

Sample Firms from Tobacco Industry

No.	Company's name	Sectors	Code
1	BAT Indonesia Tbk.	*Tobacco Manufactures*	BATI
2	Bentoel International InvestamaTbk.	*Tobacco Manufactures*	RMBA
3	GudangGaramTbk.	*Tobacco Manufactures*	GGRM
4	HM SampoernaTbk.	*Tobacco Manufactures*	HMSP

The control samples are firms in banking industry. We choose banking industry as control sample based on the reason that the industry will not be affected by the smoking ban *fatwa* news. Additionally, the firms shares should actively traded during 200 days in estimation period and during event day period; those firms do not experience any confounding events such as earnings and dividend announcement during the observation period. Table 2 depicts the firm in banking industry that meet the above category.

[INSERT TABLE 2HERE]

4. Research Design and Methodology

4.1 Empirical Model - The Standard Market Model

As the objective of this study is to investigate the market reaction upon the smoking ban *fatwa* news, the event study methodology is employed. This methodology allows us to measure the effect of a particular event on the share return of the firms. To estimate the abnormal return for each day related to market reaction of smoking ban *fatwa news*, a standard market model is used (see Equation 1).

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \quad (1)$$ [b,c]

Equation 1 is applied to estimate the OLS parameters, $\hat{\alpha}_i$ and $\hat{\beta}_i$. The estimation period used in this study covers 200 days prior to day -1. The abnormal returns surrounding each event are determined based on Equation 2.

$$AR_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt}) \quad (2)$$ [d]

In addition to a daily event window, a 3-day event window (-1 to +1), a 5-day event window (-2 to +2) and a 7-day event window (-3 to +3) are calculated. It is assumed that the length of the event window is enough to capture possible expectation or information leakage before the event, while it is not too long to face problems with confounding events falling within the event window. Cumulative abnormal returns (CAR_{it}) for each firm are computed by summing up the firm's abnormal return during the event window (Equation 3).

[b] R_{it} and R_{mt} are calculated using the following equation: R_{it} = ($P_{it} - P_{it-1}$)/ P_t , R_{mt} = (M_t - M_{t-1}) / Mt, where P_{it} is the share price of firm *i* at time *t*; P_{it-1} the share price of firm *i* at time *t-1*, M_t is the market index of at time *t*; M_{t-1} is the market index at time *t-1*

[c] In equation 1, R_{it} is the security return for firm *i* on day *t*, R_{mt} is the market return on BEI composite index (IHSG) on day *t*, α_i and β_i are the Ordinary Least Square (OLS) coefficients and ε_{it} is the disturbance term (residual)

[d] In equation 2, AR is the abnormal return for firm *i* on day t and α_i and β_i are the OLS estimates of market model parameters for *firm i.*

$$CAR_{it} = \frac{1}{N}\sum_{t=1}^{t=N} \varepsilon_{it} \quad (3)$$ [e]

5. Empirical Results

Descriptive Statistics of Tobacco's Firm

Table 3 reports descriptive statistics for abnormal returns for the 4 experiment sample firms. Panel A, B, C and D show the descriptive statistics for daily abnormal return *(AR)*, 3-day, 5-day and 7-day cumulative abnormal returns *(CAR)* surrounding the events.

[INSERT TABLE 3 HERE]

Panel A in Table 3 shows that the daily *AR* (day -1 to day +1) from for January 27 event window are positive except for the day 0, which is the first trading day after smoking ban *fatwa* news[f]. In day 0, it shows that the *AR* is -0.00535 (negative) while in day -1 and +1 are 0.01267 and 0.00955, respectively. As illustrated in Panel B, the *AR* also became positive when the returns were accumulated for 3 days except for day 0 to day +2 where the *AR* is -0.00006. Moreover, we find that the *AR,*remained positive when returns were accumulated for 5 days and 7 days as depicted in Panel C and D respectively.

Descriptive Statistics of Control Firms

Table 4 reports descriptive statistics for abnormal returns of the control firms from banking industry. Panel A, B, C and D show the descriptive statistics for daily abnormal return *(AR)*, 3-day, 5-day and 7-day cumulative abnormal returns *(CAR)* surrounding the events.

[INSERT TABLE 4 HERE]

In general, it is interesting to see that the share price reaction in banking during the event date were moving into opposite direction compare to the share price movement in tobacco industry. Panel A in Table 4 shows that the daily *AR* (day -1 to day +1) from for January 27 event window are negative except for the day 0. In day 0, it shows that the *AR* is 0.00120 (positive) while in day -1 and +1 are -0.03147 and -0.01456, respectively. As illustrated in Panel B, the *AR* also became negative when the returns were accumulated for 3 days. Finally, we find that the *AR,*remained negative when returns were accumulated for 5 days and 7 days as depicted in Panel C and D respectively.

Table 5 reports the abnormal return and cumulative abnormal return surrounding the event date. The result shows the mean coefficient for daily AR for the news related to the smoking ban *fatwa* is negative. Meanwhile, the 3-day, 5-day and 7-day CAR is positive.

[INSERT TABLE 5 HERE]

The empirical results of daily, three-day, five-day and seven-day abnormal returns for 4 tobacco firm provide mix evidence. The parametric test (*t*-test) for January 27, 2009 event window shows that AR is only significant at 15% level using one tailed test, with *t*-statistic (*p*-value) of -1.433 (0.13). However, the CAR_3, CAR_5, and CAR_7 are not

[e] In equation 3, CAR_{it} is the cumulative abnormal return for firm *i* in time *t* and *N* is the number of days in the event widow.

[f]The smoking ban *fatwa* was issued on Sunday, January 25, 2009. The trading day started on Tuesday, January 27, since Monday, January 26 was a Chinese New Year public holiday.

significant with *t*-statistics (*p*-value) of 0.646 (0.25), 0.688 (025) and 1.327 (0.16), correspondingly. Hence, we only find little evidence to support on H_1 on which the market reacts negatively to smoking ban *fatwa* news.

We provide some explanations on why market does not react strongly to the smoking ban *fatwa* are (1) the equity investors believe that the smoking ban *fatwa* is not legally binding; hence it may not affect the tobacco industry significantly (2) the market believes that the smoking ban *fatwa* is not a blanket on smoking. The fatwa is basically not to ban smoking for Muslims, it instead issued a *fatwa* placing more limited restrictions on tobacco use, especially to the group of smoker who smoke in public, children and pregnant woman.

Consistent with the result in Table 5, our parametric test on abnormal return of tobacco firms and banking firms as control sample provide no support to H_2. In other words, there is no difference on abnormal return at the date of smoking ban *fatwa* – between firms in tobacco industry and banking industry. The result is shown in table 6 below.

[INSERT TABLE 6 HERE]

As illustrated in Table 6, The AR, CAR_3, CAR_5, and CAR_7 difference between firms in tobaccos industry and banking industry are not significant with *t*-statistics (*p*-value) of -0.115 (0.45), 0.648 (0.25) 0.594 (0.30) and 0.908 (0.19), correspondingly.

6. Conclusion

The objective of this study is to assess the share price reactions to smoking ban *fatwa* on Indonesia tobacco's company. We expect that the smoking ban fatwa in the world's largest Muslim population will hit the tobaccos industry revenues, lower tobacco's company profit and eventually affect the share price of those firms. Our study failed to find a statistically significant effect of smoking ban *fatwa* on tobacco's firm stock market return. It suggests that the investors do not see the *fatwa* as a factor that may control the tobacco consumption in Indonesia – thus it may not affect the tobacco's firm revenues and profit in the future

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Table 2.

Firms from Banking Industry as Control Sample

No.	Company's name	Sector	Symbol
1	Bank AgroniagaTbk.	*Banking*	AGRO
2	Bank Bumiputera Indonesia Tbk.	*Banking*	BABP
3	Bank Capital Indonesia Tbk.	*Banking*	BACA
4	Bank Central Asia Tbk.	*Banking*	BBCA
5	Bank UOB BuanaTbk.	*Banking*	BBIA
6	Bank BukopinTbk.	*Banking*	BBKP
7	Bank Negara Indonesia (Persero) Tbk.	*Banking*	BBNI
8	Bank Nusantara ParahyanganTbk.	*Banking*	BBNP
9	Bank Rakyat Indonesia (Persero) Tbk.	*Banking*	BBRI
10	Bank Century Tbk.	*Banking*	BCIC
11	Bank DanamonTbk.	*Banking*	BDMN
12	Bank Eksekutif International Tbk.	*Banking*	BEKS
13	Bank KesawanTbk.	*Banking*	BKSW
14	Bank Mandiri (Persero) Tbk.	*Banking*	BMRI
15	Bank BumiArtaTbk.	*Banking*	BNBA
16	Bank NiagaTbk.	*Banking*	BNGA
17	Bank International Indonesia Tbk.	*Banking*	BNII
18	Bank PermataTbk.	*Banking*	BNLI
19	Bank SwadesiTbk.	*Banking*	BSWD
20	Bank Victoria Int'l. Tbk.	*Banking*	BVIC

Table 4.
Descriptive Statistics for Abnormal Returns and CAR of 20 Sample Control Firm

Day	Mean	Median	SD	Q1	Q3	Min	Max
Panel A: Daily AR for January 27 event window							
-1	-0.03147	-0.01378	0.06320	-0.0348	-0.0004	-0.27329	0.01491
0	0.00120	-0.00433	0.12574	-0.0183	0.0028	-0.36428	0.38449
+1	-0.01456	0.00206	0.07615	-0.0091	0.0189	-0.27685	0.04991
Panel B: CAR_3 for January 27 event window							
-2 to 0	-0.01615	-0.00612	0.07348	-0.0134	0.0016	-0.30696	0.10394
-1 to 1	-0.01511	-0.00395	0.06174	-0.0098	0.0011	-0.27028	0.03809
0 to +2	-0.00551	0.00189	0.06529	-0.007	0.0182	-0.26693	0.07906
Panel C: CAR_5 for January 27 event window							
-3 to 1	-0.01940	-0.00771	0.06037	-0.0128	0.0004	-0.27349	0.01266
-2 to +2	-0.01290	-0.00161	0.06175	-0.0092	0.0067	-0.27148	0.01982
-1 to +3	-0.01474	-0.00318	0.06534	-0.0128	0.0098	-0.28748	0.02619
Panel D: CAR_7 for January 27 event window							
-3 to +3	-0.01808	-0.00728	0.06335	-0.012	0.0024	-0.28486	0.01077

Table 5.

Daily, Three-Day, Five Day and Seven Day Abnormal Returns for 4 Tobacco Firm in Response to Smoking Ban *Fatwa*

Event Date	Expected Sign	One Day Abnormal Return (*t*-stat.)	Three-Day Abnormal Returns (*t*-stat.)	Five-Day Abnormal Returns (*t*-stat.)	Seven Day Abnormal Returns (*t*-stat.)
January 27, 2009	-	-0.0062	0.0054	0.0041	0.0114
		(-1.433)*	(0.646)	(0.688)	(1.327)

All tests of hypotheses are directional (one-tailed)

*, indicate significant results at the 15 percent levels.

Abnormal returns (AR) and Cumulative Abnormal Returns are computed using the following model:

$$AR_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt})$$

$$CAR_{it} = \frac{1}{N}\sum_{t=1}^{t=I} AR_{it}$$

Where:

AR_{it} is the abnormal return for firm i on day t, R_{mt} is the market return on IDX composite index on day t, R_{it} is the security return for firm i on day t, $\hat{\alpha}_i$ and $\hat{\beta}_i$ are the OLS estimates of market model parameters for firm i, CAR_{it} is the Cumulative Abnormal Return for firm i, I is the number of days in the event widow, and N is the total number of observation.

Table 6.

Daily, Three-Day, Five Day and Seven Day Abnormal Returns for 4 Tobacco Firms versus 20 Firms from Banking Industry in response to Smoking Ban *Fatwa*

Event Date	Expected Sign	Mean Difference One Day Abnormal Return (*t*-stat.)	Mean Difference Three-Day Abnormal Returns (*t*-stat.)	Mean Difference Five-Day Abnormal Returns (*t*-stat.)	Mean Difference Seven Day Abnormal Returns (*t*-stat.)
January 27, 2009	?	-0.0074 (-0.115)	0.0205 (0.648)	0.0170 (0.594)	0.0295 (0.908)

All tests of hypotheses are directional (one-tailed)

Abnormal returns (AR) and Cumulative Abnormal Returns are computed using the following model: $AR_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt})$ $CAR_{it} = \frac{1}{N}\sum_{t=1} AR_{it}$

Where:

AR_{it} is the abnormal return for firm i on day t, R_{mt} is the market return on IDX composite index on day *t*, R_{it} is the security return for firm *i* on day *t,* α_i and β_i are the OLS estimates of market model parameters for firm i, CAR_{it} is the Cumulative Abnormal Return for firm *i*, *I* is the number of days in the event widow, and *N* is the total number of observation.